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Amendments to the Claims

The following listing of claims replaces any previous versions and listings of claims in the application. Claims 1-12 are pending in this application.

Listing of Claims:

1. (Currently Amended) An optical pickup that is provided in an information recording/reproducing device and performs both information recording and information reproduction on/from an information carrier by irradiating the information carrier with light, comprising:

a coherent light source;

a focusing optical system that converges and directs light from the coherent light source onto an information carrier; and

a spot size adjustor that switches a size of a light spot so that a size of a light spot in a direction perpendicular to an information track is d_1 in an information reproducing operation and the size of a light spot in the direction perpendicular to an information track is d_2 in an information recording operation, wherein $d_2 < d_1$ is satisfied ~~reduces a size of a light spot formed on the information carrier in a recording operation, relative to a size of a light spot in a reproducing operation, in a direction perpendicular to an information track~~.

2. (Original) The optical pickup according to claim 1, wherein the spot size adjuster includes a variable phase filter that is disposed between the coherent light source and the focusing optical system and that is capable of varying a quantity of a phase shift,

wherein the variable phase filter is divided into at least three regions to produce a phase difference in the direction perpendicular to an information track of the information carrier.

3. (Original) The optical pickup according to claim 2, wherein the variable phase filter is divided into three regions, and a width of a center region among the three is in a range of 10% to 20% of a width of a light beam passing through the variable phase filter.

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4. (Original) The optical pickup according to claim 2, wherein the variable phase filter includes a homogeneous-alignment liquid crystal element that is aligned in a direction parallel with a polarization direction of light from the coherent light source.

5. (Original) The optical pickup according to claim 1, wherein the spot size adjustor includes:

a variable wavelength plate that is disposed between the coherent light source and the focusing optical system and that is capable of varying a quantity of birefringence; and

an analyzer disposed between the variable wavelength plate and the focusing optical system,

wherein the variable wavelength plate is divided into at least three regions to produce a phase difference in the direction perpendicular to the information track of the information carrier.

6. (Original) The optical pickup according to claim 5, wherein the variable wavelength plate includes a homogeneous-alignment liquid crystal element that is aligned in a direction parallel with a polarization direction of light from the coherent light source.

7. (Previously Presented) The optical pickup according to claim 1, wherein the spot size adjustor includes:

a variable wavelength plate that is disposed between the coherent light source and the focusing optical system and that is capable of varying a quantity of a phase shift; and

a variable polarization phase filter that is disposed between the variable wavelength plate and the focusing optical system and is divided into at least four regions to produce a phase difference in the direction perpendicular to the information track of the information carrier, so as to provide a phase shift of a desired quantity to only a polarized component of a first polarization type among the light from the coherent light source,

the optical pickup further comprising:

a polarized light separator that separates reflected light from the information carrier into a polarized component of the first polarization type, and a polarized component of a second polarization type that is different from the first polarization type;

a first photodetector that detects the polarized component of the first polarization type of the reflected light from the information carrier; and

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a second photodetector that detects the polarized component of the second polarization type of the reflected light from the information carrier.

8. (Original) The optical pickup according to claim 7, wherein the variable wavelength plate includes a homogeneous-alignment liquid crystal element that is aligned in a direction tilted at approximately 45° to a polarization direction of light from the coherent light source.

9. (Original) The optical pickup according to claim 7, wherein the variable polarization phase filter includes a homogeneous-alignment liquid crystal element that is aligned in a direction parallel with a polarization direction of light from the coherent light source.

10. (Original) An optical information recording/reproducing device comprising the optical pickup according to claim 2, wherein:

the variable phase filter generates a phase difference between the regions, when information is recorded in the information carrier; and

the variable phase filter does not generate a phase difference between the regions of the variable phase filter, when information is reproduced from the information carrier.

11. (Original) An optical information recording/reproducing device comprising the optical pickup according to claim 5, wherein:

the variable wavelength plate generates a phase difference between the regions, when information is recorded in the information carrier; and

the variable wavelength plate does not generate a phase difference between the regions, when information is reproduced from the information carrier.

12. (Original) An optical information recording/reproducing device comprising the optical pickup according to claim 7, wherein:

the four regions of the variable polarization phase filter are first, second, third, and fourth regions, respectively, arranged in the direction perpendicular to the information track of the information carrier;

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when information is recorded in the information carrier, phase shifts of different quantities are provided to the first and fourth regions, and the second and third regions, respectively, while no phase shift is provided to the variable wavelength plate; and

when information is reproduced from the information carrier, phase shifts of different quantities that are different by π are provided to the first and second regions, and the third and fourth regions, respectively, while a phase shift is provided to the variable wavelength plate so as to cause the variable wavelength plate to function as a half-wavelength plate.

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